instruction manual

ViewPoint

Wireless Touch Panels (Extended Range) (Firmware version G3)

Touch Panels and Accessories

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Product Information

The ViewPoint Wireless Touch Panels and ViewPoint NetWave Touch Panels are hand-held liquid crystal display panels that allow you to control devices remotely. They have programmable firmware via the programming port.

TPDesign3 is used to construct the panel pages. Buttons are used throughout the ViewPoint panel for control over external devices. FIG. 1 shows the external jacks and buttons.

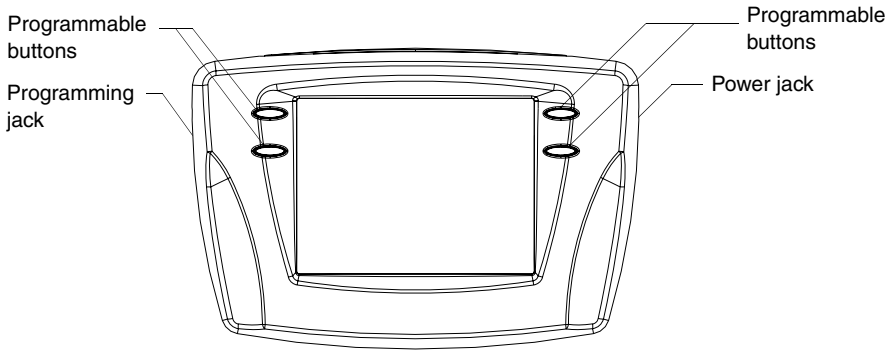


FIG. 1 ViewPoint Wireless Touch Panel

NOTE

Panel programming, pages, and drawings are uploaded and downloaded using TPDesign (Windows®) 16-bit or TPDesign3 (Windows) 32-bit touch panel programs. TPDesign is used to convert G2 panel pages into G3 firmware compatible pages.

ViewPoint Wireless Touch Panel

A Color-Passive series features a six-inch LCD with 256 colors. It comes with programmable external buttons on each side that can be used to control levels such as channels, volume, and lighting.

The ViewPoint Touch Panels are available with either one-way RF (VPT-CP) or two-way NetWave (VPN-CP) digital spread-spectrum wireless control.

NOTE

Two-way ViewPoints do not support AMX IR codes (38 KHz and 455 KHz) but do support other manufacturers IR codes. One-way ViewPoints support all IR codes.

Multiple ViewPoints in an installation

The ViewPoint transmits data via RF or IR. The VPT-CP ViewPoint Wireless Touch Panels are shipped to operate on a standard frequency of 418 MHz RF and user-selectable 38 KHz or 455 KHz IR frequencies. The ViewPoints can be ordered for different RF operating frequencies that must be set when the unit is manufactured.

The VPN-CP operates on 2.4 GHz for two-way RF communications with the AXR-NWS NetWave Server. It also provides one-way IR using other manufacturers IR codes. If you plan to use multiple one-way ViewPoints within the same area, it is *strongly recommended* that each unit be ordered for operation on different RF frequencies. This will prevent erroneous data being received by the

respective Controller. Refer to the *AXR-NWS NetWave Server* instruction manual for more information.

NOTE

The 2-way Viewpoint communication uses frequencies from 2.402 GHz to 2.478 GHz in 1 MHz steps. This results in 76 frequencies. All 16 Group IDs utilize all 76 frequencies. Changing Group IDs basically changes the hopping pattern sequence.

Specifications

The following table lists the specifications for the VPT-CP and VPN-CP.

Specifications	
Dimensions (HWD):	5.99" x 8.75" x 2.78" (15.21 cm x 11.30 cm x 5.08 cm)
Weight:	
VPT-CP	2.46 lbs. (1.11 kg) with battery, 1.97 lbs. (0.89 kg) without battery
VPN-CP	2.48 lbs. (1.12 kg) with battery, 2.01 lbs. (0.91 kg) without battery
Power:	• 7.2 VDC, 6-cell NiMH (nickel metal hydride) rechargeable battery, 3.7 Ah minimum
VPA-BP (battery)	• VPT-CP: 5 continuous hours with full back lighting
	• VPN-CP: 5 continuous hours
Power supply	13.5 VDC @ 2.8 A
Power Consumption:	1.3 A @ 13.5 VDC
Operating Frequency:	
RF (VPT-CP)	418 MHz standard (other frequencies available upon request), one-way RF transmission
IR (VPT-CP)	38 KHz or 455 KHz, one-way IR transmission
RF (VPN-CP)	2.4 GHz two-way digital spread spectrum, two-way digital spread spectrum RF or one-way OM (*other manufacturer's*) IR signals
Buttons:	Four external programmable push buttons
Display:	6" (153.9 mm) color-passive LCD, 256 colors - 320 x 240 (HV) pixel
Assignable Devices:	
VPT-CP	
ViewPoint RF	Device 1
AMX IR	Device 1
IR other than AMX's	Device 2, 3, and/or 4
VPN-CP	
Device ID	0 - 255
Group ID	0 - 15
ViewPoint	Device 1, 2, 3, and/or 4
IR	Device 2, 3, and/or 4
Cables:	
External power cable	6 mm coax male power cable - connects from an external 13.5 VDC power supply (included)
Programming cable	3-wire, 2.5 mm stereo conductor cable
Connector Ports:	
External power	6 mm coax female power jack - connects to external 13.5 VDC power supply
Programming	2.5 mm stereo female conductor jack

Specifications (Cont.)	
Memory:	512 KB of SRAM and 2 MB of flash for a total of 2.5 MB
IR files	16 KB
Buttons	225 KB
Bitmaps	1245 KB
Icons	262 KB
Fonts	262 KB
Operating Temperature:	Indoor operation at temperatures between 0° C (32° F) to 40° C (104° F)
Operating Humidity:	5% to 90% RH (non-condensing)
Enclosure:	High impact molded plastic, matte black finish
Included Accessories:	
VPA-BP	ViewPoint Rechargeable Battery
Power supply	13.5 VDC, PS 2.8 A power supply
Programming cable	2.5 mm stereo to male DB-9 (FG10-817)
Optional Accessories:	
VPA-BP	Additional ViewPoint Rechargeable Battery (**FG0962**)
AXR-RF	RF Receiver (VPT-CP only) (**FG782-418**)
AXR-NWS	NetWave Server (VPN-CP only) (**FG5930-02**)
AXR-NWS/EU	NetWave Server (VPN-CP/EU only)(**FG5930-12**)
VPA-DS	ViewPort Docking Station (**FG5961-02**)
Extension cable	DB-9 extension cable (female DB-9 to female DB-9) (**FG10-727**)

Recharging the Battery

The battery (VPA-BP) can be recharged by connecting the 13.5 VDC power supply to the power jack on the side of the ViewPoint (FIG. 1). The battery can also be charged on the ViewPort docking station. Refer to the *VPA-DS ViewPort Docking Station* section on page 49 for more information about charging batteries on the ViewPort docking station.

Using Connector Ports

All ViewPoints have two connectors (FIG. 2). The power jack is for connecting an external 13.5 VDC power supply for ViewPoint operation and charging. The programming jack is used for communication between the ViewPoint touch panel and TPDesign3. The programming jack uses a three-wire, 2.5 mm stereo jack. The required cable and power supply comes furnished with the ViewPoint.

To download and upload TPDesign3 touch panel pages:

1. Connect the 2.5 mm stereo plug (male) end of the programming cable (**FG10-817**) into the programming jack on the side of the ViewPoint.
2. Connect the DB-9 end of the programming cable (FIG. 2) to the female DB-9 connector on the DB-9 extension cable (**FG10-727**).
3. Connect the female DB-9 terminal end of the extension cable to the port on the back of your computer (FIG. 2).
4. Configure the communication parameters in TPDesign3.

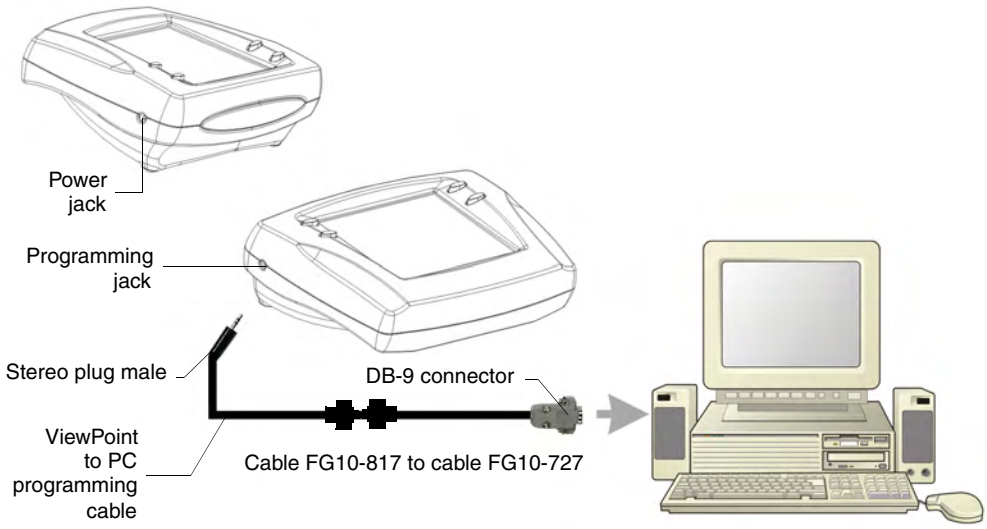


FIG. 2 ViewPoint connectors

Cleaning the Touch Overlay

You should clean the touch screen overlay after each day's use. Always use clean cotton cloths, and a spray bottle of cleaning solution consisting of 50% isopropyl alcohol and 50% water.

NOTE

*It is recommended that you **do not attempt to replace the internal Lithium battery**.*
This battery has a lifespan of up to 5 years.
If there is a problem with this piece, please contact your AMX sales representative to make arrangements to ship your panel back to the factory for battery replacement.

Designing Touch Panel Pages

The VPT-CP ViewPoint one-way models do not support bargraphs, joysticks, VGA, or video (video bargraphs and video joysticks). These functions are available in the EDIT drop-down menus and can be setup. However, the functions are not operational. Since the VPN-CP modules contain two-way RF, they support both bargraphs and joysticks.

There are three ways to approach creating touch panel pages:

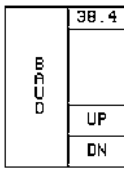
- TPDesign3 - Refer to the *TPDesign3 Touch Panel Program (Version 3.16 or higher)* instruction manual for more information.
- VPXpress - Refer to the *VPXpress ViewPoint System Design/Programming Software Program (Version 1.01 or higher)* instruction manual for more information.
- On-board editor

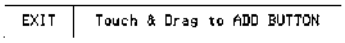
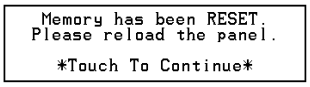
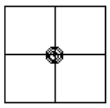
This document describes the basics of using the on-board editor to create pages and buttons.

Buttons

Standard button types include rectangles and other geometric shapes that you can create with the touch panel editor. Buttons are set with attributes, which means there is feedback for the Controller when you touch the button.

General buttons are part of the default touch panel program and cannot be changed. You use general buttons to create or revise pages and specify panel communication parameters. The General Button types are described in the table below.

General Button Types	
Selection buttons	Selection buttons appear on touch panel pages and set communication parameters.
Information buttons	Information buttons contain serial numbers and firmware version information. The properties of these buttons cannot be changed. These buttons have a dark fill and light text.
Adjustment buttons 	You can use the UP and DN buttons to set adjustment buttons. The adjustment button example sets the baud rate for the connection from the touch panel to the computer.
Decision buttons	Decision buttons appear when an operation has two options and requires verification before an action is performed.

General Button Types (Cont.)	
Keypad buttons	The keypad button opens a keypad so you can enter a password or value assignment. All keypad buttons are interactive except for the entry display.
Status buttons	Status buttons always have a dark fill with light letters and have no functionality except to display information.
Operation bars 	Operation bars appear in the place of the Editor bar, after selecting a button or page edit operation. The operation bar indicates which edit function is currently active. When an edit operation is selected, it remains active until you press EXIT.
Touch to Continue buttons 	"Touch to Continue" buttons appear when an operation requires user acknowledgement.
Joystick buttons 	Joysticks are vertical and horizontal direction controllers for use with pan and tilt camera controllers.
Bargraph buttons	Bargraph buttons display a dynamic bargraph (vertical or horizontal). An example is the Battery level indicator button.

Activating Edit Mode

You must activate EDIT mode before creating touch panel pages and buttons. Use the EDIT button to enter Edit mode. When powering up the touch panel, the first page is the Main page (see FIG. 3). Note that the Edit button is not available initially.

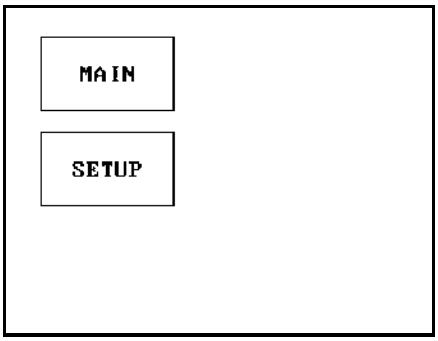


FIG. 3 Main Page

To activate edit mode:

1. Press SETUP in the Main page to open the Setup page (FIG. 4).

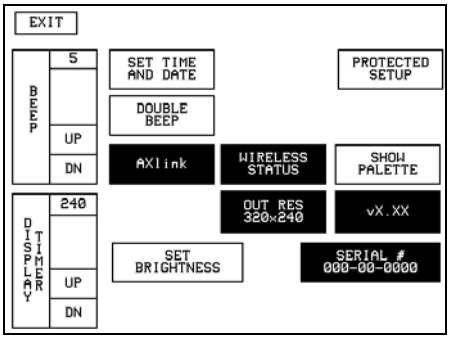


FIG. 4 Setup page

2. Press PROTECTED SETUP to open the keypad.
3. Enter **1988** in the keypad and press ENTER to open the Protected Setup page (1988 is the default password).
4. Press EDITOR to enable Edit mode. The EDITOR button is highlighted in the Protected Setup page when enabled, as shown in FIG. 5.

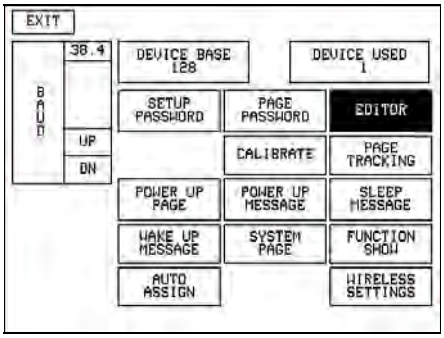


FIG. 5 Protected Setup page with the active EDITOR button

5. Press EXIT to close the Protected Setup page and return to the Setup page (now in Edit mode).
6. Press EXIT again to return to the Main page. The EDIT button appears at the top of the page indicating that Edit mode is active.
7. Press EDIT to open the Edit bar. The BUTTON and PAGE options, in the Edit bar, (FIG. 6) are used to design and modify button and page settings.

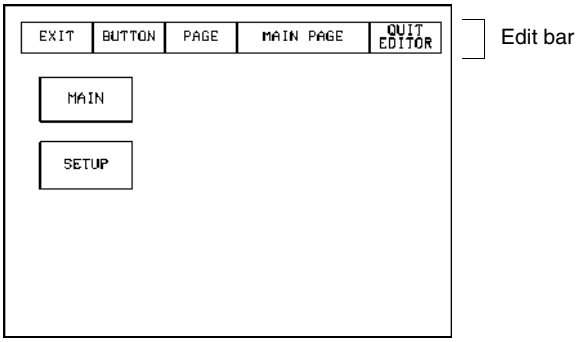


FIG. 6 Main page with Edit bar

Setting the Device Base

Press the DEVICE BASE option, in the Protected Setup page (FIG. 5), to assign a base (starting) device address to the touch panel.

1. Enter the base address for the touch panel. The base address range is from 1 - 255. Standard device addresses begin at 128.
2. Press Enter to save.

Setting the Device Used

Use the DEVICE USED option in the Protected Setup page (FIG. 5) to assign a value for the number of devices being controlled by the touch panel.

1. Press DEVICE USED to open the keypad and enter the panel's device number from 1 - 4. Each device number supports up to 255 programmable channel codes. The multiple device settings allow you to create up to four unique touch panel buttons and/or pages. This value is used to determine the current device being used by the panel.
2. Enter the number of devices being used by the touch panel.
3. Press Enter to save the value.

Adding a page

1. Press PAGE on the Edit bar to open the PAGE menu.
2. Press ADD to open the keyboard and enter a name for the new page. Page names can be up to 20 characters.
3. Press EXIT CHANGE to save, close the keyboard, and go to the new page.

Setting the page color

1. Press EDIT to open the Edit bar on the newly created page.
2. Press PAGE on the Edit bar to open the PAGE menu.
3. Press PAGE COLOR to open the color palette.
4. Select a color from the palette. The page automatically changes to the new color.

Adding a button

To add a button to the current page:

1. Press BUTTON on the Edit bar to open the BUTTON menu.
2. Press ADD to open the ADD BUTTON operation bar. Then, touch and drag on the LCD screen to create the button. The first touch point is the upper-left corner of the button.

Resizing a button

1. Press BUTTON on the Edit bar to open the BUTTON menu.
2. Press RESIZE. Then, touch any edge of the button and drag.
3. Press EXIT on the Edit bar to exit Edit mode.

Button Properties

Use the PROPERTIES option of the BUTTON menu in the Edit bar to set button borders, page flips, button colors for channel on and off conditions, and channel and variable text codes. These steps apply to setting properties for external buttons as well.

1. Press BUTTON on the Edit bar to open the BUTTON menu options.
2. Press PROPERTIES to open the PROPERTIES operation bar.
3. Press the new button to open the Button Properties page.
4. Press BUTTON TYPE to open the BUTTON TYPE menu.
5. Choose a button type for the selected button to open the associated Button Properties page. Each button type has its own Button Properties page with settings specific to the button type.
6. Press BORDER to open the BUTTON BORDER pages.
7. Select a border to set for the button and return to the Button Properties page. The BORDER button changes to show the selected border type.

Setting the channel code

The channel button sets the device and button channel codes for the buttons. Channel codes work the same for all button types, including joysticks and bargraphs.

1. In the Button Properties page, press DEV to open the keypad and set the touch panel's device number.
2. Enter 1, 2, 3, or 4 in the keypad. The programming software uses device codes 1 - 4 to identify the touch panel. The ViewPoint has a four-device capability.

If DEVICE USED is set to 4 and Base Device Number is 128, the Controller recognizes bus devices 128 - 131.
The panel does not allow you to enter a device number greater than the DEVICE USED without first displaying a decision box asking if you accept the new selection or not.

- For one-way ViewPoints (VPT-CP), use device number 1 for AMX IR and RF. Use device numbers 2, 3, and 4 for other manufacturer's IR codes (at frequencies other than the supported 38 KHz and 455 KHz).
- For two-way ViewPoints (VPN-CP), device numbers 1 - 4 can be AMX RF. The AMX IR is not supported (38 KHz and 455 KHz); however, other manufacturer's IR codes are supported by assigning ViewPoint device numbers 2, 3, and 4 for IR codes.

3. Press ENTER to save the device number, close the keypad, and return to the Button Properties page.
4. Press CHAN to open the keypad and enter a channel value of 1 - 255. The source code uses the channel code number to identify the button and its programmed operations. The channel code for non-active buttons is 0.
5. Press ENTER to save the channel number, close the keypad, and return to the Button Properties page.

Setting the variable text code

The variable text buttons set the device and button channel codes for the buttons. Variable text codes work the same for all button types, including joysticks and bargraphs.

1. Press DEV to open the keypad and set the device number.
2. Enter 1, 2, 3, or 4 in the keypad. The source code uses device codes 1 - 4 to identify the touch panel.
3. Press ENTER to save, close the keypad, and return to the Button Properties page.
4. Press CHAN to open a keypad and set the channel number.
5. Enter a channel value of 1 - 255 in the keypad. The source code uses the channel code number to identify the button and its operations.
6. Press ENTER to save the channel number, close the keypad, and return to the Button Properties page.

Setting the page flip

1. Press the PAGE FLIP Type button (FIG. 7) in the Button Properties page to open the Page Flip Type menu.

FIG. 7 Page FLIP Type button

2. Select a Page Flip type. If you select FLIP PREVIOUS in the Page FLIP Type menu, the FLIP to Page button appears.
3. Press the FLIP to Page button to open a list of all the saved touch panel pages. If the desired page is not present in the menu, verify the page has been saved.
4. Select the target page for the page flip.

Setting the button colors for channel-off conditions

1. Press any button to open the Button Properties page.
2. Press BORDER under CHANNEL OFF in the Button Properties page. The color palette appears. Select a color to set as the border.
3. Press the FILL button in the Button Properties page to open the color palette. Select a color to set as the fill.
4. Press the TEXT button to open the palette. Select a color to use for the text.
5. Press EXIT SAVE CHANGE in the Button Properties page to save the new button properties and return to the current page.

Adding text, icons, and bitmaps to a button

1. Press BUTTON on the Edit bar to open the BUTTON menu.
2. Press TEXT/IMAGE to add text to the button. The TEXT/IMAGE operation bar appears.
3. Press any button to open the Text/Image page.
4. Go through each option and set as desired:
   - TEXT OFF and TEXT ON sets the text for the button's Off and On state.
   - ICON OFF and ICON ON sets the icon for the button's Off and On state.
   - BITMAP OFF and BITMAP ON sets the bitmap for the button's Off and On state.
   - MAKE ON SAME AS OFF sets the On and Off properties the same.

You cannot create or edit buttons with Unicode fonts on the panel. Any use of the TEXT/IMAGE button to alter or create Unicode font supported buttons must be done in the TPDesign3 Touch Panel Design Program.

5. Press EXIT SAVE CHANGE to close the Text/Image page and return to the Main page.

Using TPDesign3 to Download Bitmaps, Icons, and Fonts

TPDesign3 allows you to download bitmaps, icons, and fonts into your touch panel from an existing touch panel program. Touch Panel programs are created in the TPDesign3 software program. Refer to the *TPDesign3 Touch Panel Program (version 3.13 or higher)* instruction manual for more information. Use the Download to Panel button to download a project file.

To download bitmaps, icons and/or fonts from an existing TPDesign3 project file:

1. Then, launch the TPDesign3 software program and open a project file that contains the desired bitmaps, icons, and fonts.
2. Select File from the menu bar to open the File menu.
3. In the File menu, click on Download to Panel, to open the Download to Panel dialog box.
4. Click the Comm Settings tab to set the communications port, baud rate, and other communication settings.
5. Then, click the Actions tab to set the communication mode and select which elements of the project file you want to download to the touch panel.
6. In the What To Send area, select one or more of the available options (All Bitmaps, All Icons, All Fonts).
7. Select the mode of communication with the touch panel (RS-232 and AXlink). Confirm that the correct panel is selected by verifying the ID values with the Base Address assigned to the touch panel in the Protected Setup page.
8. After clicking Connect, the Available Panels list appears in the Available Panels field. Click Begin to start downloading the project file into the panel.
9. After completing the download, the bitmaps, icons and fonts that were downloaded are now accessible via the BITMAPS, ICONS and FONTS menus.

Button Properties for External Pushbuttons

External pushbuttons are configured with features similar to on-screen buttons. Their functionality can be set just as any other button on the touch panel.

Use the PROPERTIES operation bar to assign properties to external pushbuttons. The BUTTON options and VARIABLE TEXT features within the Properties page do not appear. Although the Border and Color sections of this page appear, they are of no use to external pushbuttons since they do not appear on-screen.

Creating a Bargraph and Joystick

Bargraphs are level monitors and adjustable level controls. These levels can be configured to adjust and monitor audio outputs and lighting levels. Before starting, make sure to connect the touch panel to your Controller; otherwise, the bargraph may not work properly.

Bargraphs and Joysticks only function on VPN-CP touch panels.

Joysticks are vertical and horizontal direction controllers you can use for camera for pan and tilt control.

Adding a bargraph or joystick button

Create a new button using the ADD operation bar in the BUTTON menu.

1. Press BUTTON in the Edit bar to open the BUTTON menu.
2. Press PROPERTIES in the BUTTON menu to open the PROPERTIES operation bar.
3. Press any button to open the Button Properties page.
4. Press BUTTON TYPE to open the BUTTON TYPE menus. Choose a button type to open its Button Properties page.

Setting Bargraph and Joystick Properties

Use the Button Properties page to set channel, level, and button colors. Refer to*Setting the variable text code* section on page 10 and*Setting the channel code* section on page 9 for further information. Refer to*Setting the button colors for channel-off conditions* section on page 10for more information on colors for channel-off conditions.

You are able to position the joystick crosshair in the Button Properties page.

Setting the level code

Level buttons set the device and number codes for the touch panels.

Joysticks use two level numbers. The first is for the X-axis and the second is for the Y-axis. You only need to specify the first level.

1. Press DEV to open a keypad and set the device number.
2. Enter 1, 2, 3, or 4 in the keypad.
3. Press ENTER to save the device number, close the keypad, and return to the Button Properties page.
4. Press NUM to open a keypad and set the level number assigned to the device.
5. Enter a number 1 – 8. Each device can range from 1 – 8 levels **except** for joysticks, where the range is 1 – 7.
6. Press ENTER to save, close the keypad, and return to the Button Properties page.

Programming

You can program the touch panel, using the commands in this section, to perform a wide variety of operations using Axcess Send_Commands and variable text commands. Use the commands described in this section to program the touch panel.

Serial Commands

Serial Commands are used in the AxcessX Terminal Emulator mode. These commands are not insensitive.

Serial Commands	

?PAR
Returns panel parameters to the PC terminal.
	Panel parameters include: firmware version, device number, mouse type, output resolution, number of devices, cursor enable, brightness, and contrast.
	Syntax:
	`"?PAR"`
	Example:
	`?PAR`
	Requests the information.

$SC
Sends a serial port send_command within a panel, as if sent from Axcess.
	Syntax:
	`"$SC <device offset>,"'<send_command>,<variable text #>,<data>'""`
	Variables:
	device offset = Device number
	variable text # = The variable text number value on the touch panel.
	Example:
	`$SC 1,"'@TXT',2,'TEXT'"`
	The string is sends the command to put text on a button with a variable text value of 2. It is crucial that all the correct ' and " be used with no spaces after the commas.
	Example:
	`$SC 1,"'SLEEP'"`
	Sets a touch panel to sleep.

CALIBRATE
Starts touch panel calibration.
	Syntax:
	`"CALIBRATE"`
	Example:
	`CALIBRATE`
	Starts the calibration sequence mode on the touch panel.

CHECK CAL
Enters the calibration test mode.
	Syntax:
	`"CHECK CAL"`
	Example:
	`CHECK CAL`
	Begins the calibration check mode on the touch panel.

ECHO ON
Turns On character echo.
	Syntax:
	`"ECHO ON"`
	Example:
	`ECHO ON`
	The character echo is sent back to the computer.

Serial Commands (Cont.)	
ECHO OFF Turns Off character echo.	Syntax: "ECHO OFF" Example: ECHO OFF The character echo is not sent back to the computer.
GET CAL Gets the calibration variables.	Syntax: "GET CAL" Example: GET CAL Gets the calibration variables on the touch panel.
HELLO Verifies that serial communication is working properly.	Syntax: "HELLO" Example: HELLO If the communication is active and working, the response is "How are you doing?".
LZAP! Clears all low-level memory and erases external touch drivers.	Syntax: "LZAP!" Example: LZAP! Clears all IR codes from the panel. Commands such as LZAP! and ZAP! can be used as both Serial Commands or Send_Commands.
RESET Cycles power on the touch panel.	Syntax: "RESET" Example: RESET Cycles the power on the touch panel. Once the firmware is downloaded, send this command to recycle power to the panel. This command prevents the user from having to physically re-cycling power on the unit.
SET CAL Sets the calibration variables.	Syntax: "SET CAL <X Multiplier> <X Offset> <Y Multiplier> <Y Offset>" Example: SET CAL 2F 3A 2B 62 Sets the calibration values on the touch panel.
SETUP Puts the touch panel on the Setup Page.	Syntax: "SETUP" Example: SETUP Flips the touch panel to the Setup page.
VER Restores the current version.	Syntax: "VER" Example: VER Returns the current version of the main firmware.

Serial Commands (Cont.)	

WORKING?
Verifies the communication between the touch panel and the Terminal Emulator.
	Syntax:
	`"WORKING?"`
	Example:
	`WORKING?`
	Response:
	`$SC 1,"'CPAGE72-Main Page'"`
	Responding touch panel turns its Main page the color white. This command verifies serial communication. The ViePoint panel must have a page named Main Page for this command to work properly.

ZAP! Clears all memory and erases buttons, pages, drawings, and symbols.	Syntax: `"ZAP!"` Example: `"ZAP!"` Clears all memory and erases all buttons, pages, drawings, and symbols.

Only use the ZAP! command to erase the saved data in the touch panel; data cannot be recovered after it is erased.

System Send_Commands

System Send_Commands are stored in the Controller and direct the touch panel to perform various operations.

System Send_Commands	

$SP
Sends data out the serial port with trailing CR and LF.
	Translates the ¦ and translates it as a carriage return to the next line.
	Syntax:
	`"'$SP "<data>"'"`
	Example:
	`SEND_COMMAND TP,"'$SP "CALIBRATE"'"`
	Sends the Calibrate command to another panel through the Serial Port. It is crucial that all the correct ' and " be used with no spaces after the commas.

ABEEP
Outputs one panel beep even if the beep value is set to 0 in the Setup page.
	Syntax:
	`"'ABEEP'"`
	Example:
	`SEND_COMMAND TP,"'ABEEP'"`
	Beeps the panel.

ADBEEP
Outputs a double beep even if the double beep value is set to 0 in the Setup page.
	Syntax:
	`"'ADBEEP'"`
	Example:
	`SEND_COMMAND TP,"'ADBEEP'"`
	Double beeps the panel.

System Send_Commands (Cont.)	
AKEYB Opens the touch panel keyboard and initializes the text string entry.	The keyboard string is set to null during power-up and stored until power-down. Syntax: "'AKEYB-<text string>'" Variable: text string = 0 - 59 characters Example: SEND_COMMAND TP,"'AKEYB-TOUCH HERE'" Opens the touch panel keyboard with TOUCH HERE in the display.
AKEYP Opens the touch panel keypad and initializes the number string entry.	The keyboard string is set to null during power-up and stored until power-down. Syntax: "'AKEYP-<number string>'" Variable: number string = 0 - 9999 Example: SEND_COMMAND TP,"'AKEYP-1988'" Opens the touch panel keypad with 1988 in the display.
AKEYR Closes/opens the touch panel keyboard/pad.	Syntax: "'AKEYR'" Example: SEND_COMMAND TP,"'AKEYR'" Closes the keyboard/keypad opened using the 'AKEYB', 'AKEYP', or 'PKEYP' commands.
BAUD Sets the program port baud rate.	The baud rate can also be set in the Protected Setup page's BAUD level indicator. Syntax: "'BAUD <baud rate>'" Variable: baud rate = 38400, 19200, 9600, 4800, 2400, 1200, 600, and 300 Example: SEND_COMMAND TP,"'BAUD 38400'" Sets the Baud rate to 38400.
BEEP Gives an output of one beep.	This beep command sounds one tone for a time length of 50 milliseconds. Syntax: "'BEEP'" Example: SEND_COMMAND TP,"'BEEP'" Activates one beep tone. Beeps the panel if the Beep button is not set to 0. *The BEEP command does disable the beep after a QBEEP command.*
BRIT Adjusts brightness of display.	Syntax: "'BRIT-<level>'" Variable: level = 1 - 5 (1 = minimum; 5 = maximum) Example: SEND_COMMAND TP,"'BRIT-5'" Sets to highest brightness level.

System Send_Commands (Cont.)	
CALIBRATE Starts the touch panel calibration sequence.	Syntax: "'CALIBRATE'" Example: SEND_COMMAND TP,"'CALIBRATE'" Starts the calibration operation on the touch panel.
CONT Adjusts contrast of display.	Syntax: "'CONT-<level>'" Variable: level = 1 - 12 (1 = minimum; 12 = maximum) Example: SEND_COMMAND TP,"'CONT-12'" Sets display to highest contrast level.
CLOCK Sets the time and date.	Syntax: "'CLOCK <mm-dd-yy> <hh:mm:ss>'" Variables: mm = 01 - 12, dd = 01 - 31, yy = 00 - 99 hh = 00 - 23, mm = 00 - 59, ss = 00 - 59 Example: SEND_COMMAND TP,"'CLOCK 02-08-98 19:16:00'" Sets the touch panel's date to February 8, 1998, and time to 7:16 p.m.
DBEEP Gives a double beep output.	This command only works if the Double Beep value in the Protected Setup page is set to On. Syntax: "'DBEEP'" Example: SEND_COMMAND TP,"'DBEEP'" Double beeps the panel.
ILEV Inverts the joystick axis.	Syntax: "'ILEV <joystick axis to invert>'" Variables: joystick axis to invert = 0 = Normal G3 joystick (origin: top left) 1 = Invert horizontal axis (origin: top right) 2 = Invert vertical axis (origin: bottom left) 3 = Invert both axes (origin: bottom right) Example: SEND_COMMAND TP,"'ILEV 3'" Inverts the joystick axis to move the origin to another corner.
LZAP! Clears all low-level memory and erases IR codes.	This command can be used as Serial Commands and Send_Commands. Syntax: "'LZAP'" Example: SEND_COMMAND TP,"'LZAP!'" Clears all IR codes from the panel.

System Send_Commands (Cont.)	
PAGE Flips to a page with a specified page name.	Syntax: "'PAGE-<page name>'" Variable: page name = 1 - 50 ASCII characters Example: SEND_COMMAND TP,"'PAGE-MAIN PAGE'" Flips the touch panel to the page named MAIN PAGE.
PKEYP Displays asterisks (*) for keypad entries.	Syntax: "'PKEYP-<number string>'" Variable: number string = 0 - 9999 Example: SEND_COMMAND TP,"'PKEYP-1988'" Displays the touch panel keypad with **** instead of 1988.
PPOF Closes a specific popup page.	Syntax: "'PPOF-<page name>'" Variable: page name = 1 - 50 ASCII characters Example: SEND_COMMAND TP,"'PPOF-Popup Page 1'" Closes Popup Page 1.
PPON Opens a specific popup page.	Syntax: "'PPON-<page name>'" Variable: page name = 1 - 50 ASCII characters Example: SEND_COMMAND TP,"'PPON-Popup Page 1'" Opens Popup Page 1.
QBEEP Stops all beeps.	Syntax: "'QBEEP'" Example: SEND_COMMAND TP,"'QBEEP'" Stops *all* beeps, including "'ABEEP'", "'ADBEEP'", and AXlink beeps.
RESET Clears panel status (same as power up).	*Saved data is not cleared.* Syntax: "'RESET'" Example: SEND_COMMAND TP,"'RESET'" Resets the touch panel.
SETUP Goes to the Setup page.	Syntax: "'SETUP'" Example: SEND_COMMAND TP,"'SETUP'" Flips the touch panel to the Setup page.

System Send_Commands (Cont.)

TPAGEON

Activates page tracking.

Syntax:

```
"'TPAGEON'"
```

Example:

```
SEND_COMMAND TP,'TPAGEON'

DEFINE_DEVICE
TP1 = 128 (*AMX Touch Panel*)
TP2 = 129 (*AMX Touch Panel*)

DEFINE_VARIABLE
TP1_BUFFER[100] (*Buffer for TP1*)
TP2_BUFFER[100] (*Buffer for TP2*)
TRASH[50] (*For Parsing Above*)

DEFINE_START
CREATE_BUFFER TP1,TP1_BUFFER
CREATE_BUFFER TP2,TP2_BUFFER
SEND_COMMAND TP1,'TPAGEON'
SEND_COMMAND TP2,'TPAGEON'

DEFINE_PROGRAM
(* PAGE TRACKING ROUTINE *)
IF(LENGTH_STRING(TP1_BUFFER))
{
  IF(FIND_STRING(TP1_BUFFER,'PAGE-',1))
  {
    TRASH=REMOVE_STRING(TP1_BUFFER,'PAGE-',1)
    SEND_COMMAND TP2,"'PAGE-',TP1_BUFFER"
    CLEAR_BUFFER TP1_BUFFER
  }
  IF((FIND_STRING(TP1_BUFFER,'PPON-',1))
OR(FIND_STRING(TP1_BUFFER, 'PPOF-',1)))
  {
    SEND_COMMAND TP2,TP1_BUFFER
    CLEAR_BUFFER TP1_BUFFER
  }
}

IF(LENGTH_STRING(TP2_BUFFER))
{
  IF(FIND_STRING(TP2_BUFFER,'PAGE-',1))
  {
    TRASH=REMOVE_STRING(TP2_BUFFER,'PAGE-',1)
    SEND_COMMAND TP1,"'PAGE-',TP2_BUFFER"
    CLEAR_BUFFER TP2_BUFFER
  }
  IF((FIND_STRING(TP1_BUFFER,'PPON-',1)) OR
(FIND_STRING(TP1_BUFFER,'PPOF-',1)))
  {
    SEND_COMMAND TP1,TP2_BUFFER
    CLEAR_BUFFER TP2_BUFFER
  }
}
```

(* The command string is sent to the Controller in the 'PAGE-(page name)' or 'PPON/PPOF-(page name)' format. The string is captured in the buffer for one panel and sent to the other panel. If panels are combined using the DEFINE_COMBINE statement, the routine needs to be written only once, and the command is sent back to the same panel. *)
(* END OF PAGE TRACKING ROUTINE *)

System Send_Commands (Cont.)	
SLEEP Forces the touch panel to screen saver mode.	Syntax: "'SLEEP'" Example: SEND_COMMAND TP,"'SLEEP'" Activates the screen saver mode.
TPAGEOFF Deactivates page tracking.	Syntax: "'TPAGEOFF'" Example: SEND_COMMAND TP,"'TPAGEOFF'" Deactivates the page tracking option.
WAKE Deactivates screen-saver mode and resets the sleep timer.	Syntax: "'WAKE'" Example: SEND_COMMAND TP,"'WAKE'" Deactivates the touch panel screen-saver mode and resets the sleep timer.
XMRT Sets the new network communication retry value for the panel and SoftROM.	Syntax: "'XMRT <number>'" Variable: number = 1 - 15 ASCII characters Example: SEND_COMMAND TP,"'XMRT 9'" Sets the XMODEM wait for character retries to 9.
XMTO Sets the new network communication delay for the panel and SoftROM.	Syntax: "'XMTO <number>'" Variable: number = 4 - 30 ASCII characters Example: SEND_COMMAND TP,"'XMTO 5'" Sets the new XMODEM character delay time to 5 seconds.
ZAP! Clears all memory; erases buttons, pages, drawings, and symbols.	Syntax: "'ZAP!'" Example: SEND_COMMAND TP,"'ZAP!'" Clears all memory and erases all buttons, pages, drawings, and symbols.

Only use the ZAP! command to erase the saved data in the touch panel; data cannot be recovered after it is erased.

Programming Numbers

The following information provides the programming numbers for colors, fonts, and borders.

Colors can be used to set the colors on buttons, sliders, gauges, and pages. The lowest color number represents the lightest color-specific display; the highest number represents the darkest display. For example, 0 represents light red, and 5 is dark red.

Colors and Programming Numbers

Color	No.	Color	No.
Red	0 - 5	Purple	54 - 59
Orange	6 - 11	Magenta	60 - 65
Yellow	12 - 17	Pink	66 - 71
Lime	18 - 23	White	72 - 77
Green	24 - 29	Grey	78 - 83
Aqua	30 - 35	More Grey	84 - 86
Cyan	36 - 41	Black	87
Royal	42 - 47	Transparent	255

Font styles can be used to program the text fonts on buttons, sliders, gauges, and pages. The programming numbers are assigned consecutively when downloaded to the touch panel.

Font Styles and Programming Numbers

No.	Font styles	No.	Font styles
1	Extra small	5	Extra large
2	Small	6	Hollow medium
3	Medium	8	Hollow extra large
4	Large	32 - 255	Variable fonts

You must import variable text fonts into a TPDesign3 project file, and download the project file containing the fonts to the touch panel. The variable fonts are programming numbers assigned by the touch panel during the download process.

Border styles can be used to program borders on buttons, sliders, and gauges.

Border Styles and Programming Numbers

No.	Border styles	No.	Border styles
0	No border	11	Double shadow
1	No border special	20	3-dimensional rectangle 1
2	Single line	21	3-dimensional rectangle 2
3	Double line	22	3-dimensional round 1
4	Triple line	23	3-dimensional round 2
5	Single rounded	24	3-dimensional neon 1
6	Double rounded	25	3-dimensional neon 2
7	Single raised	26	3-dimensional neon blue
8	Double raised	27	3-dimensional neon green
9	Triple raised	40	Single diamond
10	Double-line two single	41	Double diamond

Shorthand Send Commands

The shorthand commands operate control equipment just like standard Send_Commands still used in a wide variety of AMX products. However, shorthand commands are smaller byte-for-byte, and are processed more efficiently. The table below lists the shorthand Send_Commands you can use with the ViewPoint touch panels. The shorthand command data is 1-byte, non-ASCII format except for pages, passwords, text, and bitmap names.

Shorthand Send_Commands	
@CBF Sets the OFF feedback border color to the specified color.	*This works only if the specified background color is not the same as the current color.* Syntax: "'@CBF',<variable text address>,<color_number>" Variables: variable text address = 1 - 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'@CBF',1,0" Sets the OFF feedback border color to Red for the variable text button 1.
@CBN Sets the ON feedback border color to the specified color.	*This works only if the specified background color is not the same as the current color.* Syntax: "'@CBN',<variable text address>,<color_number>" Variables: variable text address = 1 - 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'@CBN',2,78" Sets the ON feedback border color to Grey for variable text button 2.
@CFF Sets the OFF feedback fill color to the specified color.	*This only works if the specified background color is not the same as the current color.* Syntax: "'@CFF',<variable text address>,<color_number>" Variables: variable text address = 1 - 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'@CFF',1,72" Sets the OFF feedback fill color to White for variable text button 1.
@CFN Sets the ON feedback fill color to the specified color.	*This only works if the specified background color is not the same as the current color.* Syntax: "'@CFN',<variable text address>,<color_number>" Variables: variable text address = 1 - 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'@CFN',1,30" Sets the ON feedback fill color to Aqua for variable text button 1.

Shorthand Send_Commands (Cont.)	
@CPG Sets the page with specified page name back-ground color to the specified color.	*This only works if the new background color is not the same as the current color.* Syntax: "'@CPG',<color_number>,'<page name>'" Variables: color number = See the Colors and Programming Numbers table on page 23. page name = 1 – 50 ASCII characters Example: SEND_COMMAND TP,"'@CPG',87,'Main Page'" Sets the page title to Main Page, and the color to Black.
@CPP Sets the specified page's back-ground color to the specified color.	*This only works if the specified background color is not the same as the current color.* Syntax: "'@CPP',<color_number>,'<pop-up page name>'" Variables: color number = See the Colors and Programming Numbers table on page 23. pop-up page name = 1 – 50 ASCII characters Example: SEND_COMMAND TP,"'@CPP',54,'Audio Page'" Sets the popup page title to Audio Page, and the color to Purple.
@CTF Sets the OFF feedback text color to the speci-fied color.	*This only works if the specified background color is not the same as the current color.* Syntax: "'@CTF',<variable text address>,<color_number>" Variables: variable text address = 1 – 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'@CTF',1,87" Sets the OFF feedback text color to Black for variable text button 1.
@CTN Sets the ON feed-back text color to the specified color.	*This only works if the specified background color is not the same as the current color.* Syntax: "'@CTN',<variable text address>,<color_number>" Variables: variable text address = 1 – 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'@CTN',1,72" Sets the ON feedback text color to White for variable text button 1.
@IDF The touch panel returns its MS-DOS file name in a string.	Syntax: "'@IDF'" Example: SEND_COMMAND TP,"'@IDF'" The touch panel returns its MS-DOS file name in a string.
@IDP Queries the touch panel to return a string with the TPDesign3 project name.	Syntax: "'@IDP'" Example: SEND_COMMAND TP,"'@IDP'" The touch panel returns a string containing the TPDesign3 project name.

Shorthand Send_Commands (Cont.)	

@PPA
Removes all popup pages from a specified page.
	If no page is specified, the active page is used.
	Syntax:
	`"'@PPA-<page name>'"`
	Variable:
	page name = target touch panel page name
	Example:
	`SEND_COMMAND TP,"'@PPA-Main Page'"`
	If there were several popup pages on 'Main Page' that are active, sending the previous command would remove them all from that page.

@PPF
Deactivates a popup page on a touch panel page.
	If a page name is empty, the current page is used. If a pop-up page is part of a group, the whole group is deactivated.
	Syntax:
	`"'@PPF-<popup page name>;<page name>'"`
	Variables:
	popup page name = target popup page name
	page name = target touch panel page name
	Example:
	`SEND_COMMAND TP,"'PPF-Laser Disc 2 Transport Control; Laser Disc Control Page'"`
	Deactivates the Laser Disc 2 Transport Control popup page on the Laser Disc Control Page. If a page name is empty, the current page is used. If the popup page is part of a group, the whole group is deactivated.

@PPK
Deactivates a popup page on *all* touch panel pages.
	If a pop-up page is part of a group, the whole group is deactivated.
	Syntax:
	`"'@PPK-<popup page name>'"`
	Variable:
	popup page name = target popup page name
	Example:
	`SEND_COMMAND TP,"'@PPK-Laser Disc 2 Transport Control'"`
	Deactivates the Laser Disc 2 Transport Control popup page on *all* touch panel pages.

@PPN
Activates a popup page on a touch panel page.
	If a page name is empty, the current page is used.
	Syntax:
	`"'@PPN-<popup page name>;<page name>'"`
	Variables:
	popup page name = popup page name
	page name = page name
	Example:
	`SEND_COMMAND TP,"'@PPN-Laser Disc 2 Transport Control; Laser Disc Control Page'"`
	Activates the Laser Disc 2 Transport Control popup page on the Laser Disc Control Page.

Shorthand Send_Commands (Cont.)	
@PPX Removes all panel popup pages.	The group that needs to be turned Off must contain the given popup page. Syntax: "'@PPX-<popup page>'" Variable: popup page = popup page name Example: SEND_COMMAND TP,"'@PPX'" Closes all popup pages from all of the pages in the panel.
@PWD Sets the password for the Page Flip on the touch panel.	Syntax: "'@PWD-<page flip password>'" Variable: page flip password = 0 - 9999 Example: SEND_COMMAND TP,"'@PWD-1988'" Sets the page flip password to 1988.
@RDW Redraws the current screen.	Syntax: "'@RDW'" Example: SEND_COMMAND TP,"'@RDW'" Sends a message to the touch panel to redraw the screen.
@SSL Changes the Sleep string sent to the Controller when the touch panel activates sleep mode.	Syntax: "'@SSL-<string>'" Variable: string = alphanumeric characters Example: SEND_COMMAND TP,"'@SSL-Touch Panel Deactivated'" Sends Touch Panel Deactivated to the Controller.
@SST Changes the Startup string sent to the Central Controller when the touch panel powers up.	Syntax: "'@SST-<string>'" Variable: string = alphanumeric characters Example: SEND_COMMAND TP,"'@SST-Touch Panel Power On'" Sends touch panel Power On to the Central Controller when the touch panel powers up.
@SWK Changes the Wakeup string sent to the Controller when the touch panel is activated.	Syntax: "'@SWK-<string>'" Variable: string = alphanumeric characters Example: SEND_COMMAND TP,"'@SWK-Touch Panel Activated'" Sends Touch Panel Activated to the Central Controller.

Color Send_Commands

Use the color Send_Commands to set the colors for text, buttons, and pages.

Color Send_Commands	
CALL Sets the colors for a variable text button.	*See the Colors and Programming Numbers table on page 23 for more information.* Syntax: "'CALL<variable text address>-<data>'" Variables: variable text address = 1 - 255 data = 6 color number series for: FILL COLOR ON FILL COLOR OFF BORDER COLOR ON BORDER COLOR OFF TEXT COLOR ON TEXT COLOR OFF Example: SEND_COMMAND TP,"'CALL1-1 3 0 0 72 74'" Sets variable text button 1 to: FILL COLOR ON = Red one shade from brightest FILL COLOR OFF = Red three shades from brightest BORDER COLOR ON = Red brightest BORDER COLOR OFF = Red brightest TEXT COLOR ON = White brightest TEXT COLOR OFF = White two shades from brightest
CBOFF Sets the OFF feedback border color to the specified color.	Syntax: "'CBOFF<variable text address>-<color_number>'" Variables: variable text address = 1 - 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'CBOFF1-0'" Sets the OFF feedback border color to Red for the variable text button 1.
CBON Sets the ON feedback border color to the specified color.	Syntax: "'CBON<variable text address>-<color_number>'" Variables: variable text address = 1 - 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'CBON1-48'" Sets the ON feedback border color to Aqua for variable text button 1.

Color Send_Commands (Cont.)	
CFOFF Sets the OFF feedback fill color to the specified color.	Syntax: "'CFOFF<variable text address>-<color_number>'" Variables: variable text address = 1 - 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'CFOFF1-72'" Sets the OFF feedback fill color to White for variable text button 1.
CFON Sets the ON feedback fill color to the specified color.	Syntax: "'CFON<variable text address>-<color_number>'" Variables: variable text address = 1 - 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'CFON1-48'" Sets the ON feedback fill color to Blue for variable text button 1.
CPAGE Sets the background page color to the specified color.	Syntax: "'CPAGE<color_number>-<page name>'" Variables: color number = See the Colors and Programming Numbers table on page 23. page name = 1 - 50 ASCII characters *(page names are case sensitive.)* Example: SEND_COMMAND TP,"'CPAGE255-MAIN PAGE'" Sets the background color on the MAIN PAGE to Transparent.
CTOFF Sets the OFF feedback text color to the specified color.	Syntax: "'CTOFF<variable text address>-<color_number>'" Variables: variable text address = 1 - 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'CTOFF1-87'" Sets the OFF feedback text color to Black for variable text button 1.
CTON Sets the ON feedback text color to the specified color.	Syntax: "'CTON<variable text address>-<color_number>'" Variables: variable text address = 1 - 255 color number = See the Colors and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'CTON1-72'" Sets the ON feedback text color to White for variable text button 1.

Variable Text Send_Commands

Use variable text Send_Commands to set the borders, fonts, and text.

Variable Text Send_Commands	
!B Sets a specific button to On or Off.	Syntax: "'!B',<variable text address>,<ON/OFF>" Variables: variable text address = 1 - 255 ON = 0 OFF = 1 Example: SEND_COMMAND TP,"'!B',128,1" Sets button 128 Off.
BTOF Sets a specific button's active state to Off.	Syntax: "'BTOF<variable text address>'" Variable: variable text address = 1 - 255 Example: SEND_COMMAND TP,"'BTOF255'" Sets the state for button 255 to Off.
BTON Sets a specific button's active state to On.	Syntax: "'BTON<variable text address>'" Variable: variable text address = 1 - 255 Example: SEND_COMMAND TP,"'BTON128'" Sets the state for button 128 to On.
!C Sets the border, font, and text in one command.	Syntax: "'!C',<variable text address>,<border style>,<font size>,'<new button text>'" Variables: variable text address = 1 - 255 border style = See the Border Styles and Programming Numbers table on page 23. font size = See the Font Styles and Programming Numbers table on page 23. new button text = Enter button text to appear on the button. Example: SEND_COMMAND TP,"'!C',1,6,6,'VCR PLAY'" Sets the title on variable text button one to VCR PLAY using a hollow medium font, and changes the border attribute to double rounded.

Variable Send_Commands (Cont.)	

!C
Sets the border, font, and text in one command.
	Syntax:
	`"'!C',<variable text address>,<border style>,<font size>,'<new button text>'"`
	Variables:
	variable text address = 1 - 255
	border style = See the Border Styles and Programming Numbers table on page 23.
	font size = See the Font Styles and Programming Numbers table on page 23.
	new button text = Enter button text to appear on the button.
	Example:
	`SEND_COMMAND TP,"'!C',1,6,6,'VCR PLAY'"`
	Sets the title on variable text button one to VCR PLAY using a hollow medium font, and changes the border attribute to double rounded.

!F
Shorthand version of 'FONT' command.
	Syntax:
	`"'!F',<variable text address>,'<font size>'"`
	Variables:
	variable text address = 1 - 255
	font size = See the Font Styles and Programming Numbers table on page 23.
	Example:
	`SEND_COMMAND TP,"'!F','1,'6'"`
	Changes the font on the variable text button one to hollow medium.

FONT
Changes the font size (or style) of the text in a specific button.
	Syntax:
	`"'FONT<variable text address>-<font size/style>'"`
	Variables:
	variable text address = The number of the variable text button (1-255).
	font size/style = The size or style of the font (1-255). See the Font Styles and Programming Numbers table on page 23.
	Example:
	`SEND_COMMAND TP,"'FONT1-6'"`
	Changes the font on the variable text button one to hollow medium. Variable fonts start at a value of 32.

!I
Shorthand version of 'ICON' command.
	Syntax:
	`"'!I',<variable text address>,'<border style>'"`
	Variables:
	variable text address = 1 - 255
	border style = 0 - 41. See the Border Styles and Programming Numbers table on page 23.
	Example:
	`SEND_COMMAND TP,"'!I',1,'6'"`
	Changes the border style on the variable text button one to double rounded.

ICON
Changes the border style of a specific button.
	Syntax:
	`"'ICON<variable text address>-<border style>'"`
	Variables:
	variable text address = 1 - 255
	border style = See the Border Styles and Programming Numbers table on page 23.
	Example:
	`SEND_COMMAND TP,"'ICON25-6'"`
	Changes the border style on the variable text button 25 to double-rounded.

Variable Send_Commands (Cont.)	
!T Shorthand version of 'TEXT' command.	Syntax: "'!T',<variable text address>,'<new button text>'" Variables: variable text address = 1 - 255 new button text = 1 - 60 characters Example: SEND_COMMAND TP,"'!T',1,'VCR PLAY'" Changes the title on variable text button one to VCR PLAY.
TEXT Enters text on a button.	Use the | character to display text on multiple lines. Syntax: "'TEXT<variable text address>-<new button text>'" Variables: variable text address = 1 - 255 new button text = Enter button text to appear on button. Example: SEND_COMMAND TP,"'TEXT2-VCR|PLAY'" Sets the VCR and PLAY text on variable button 2. The | character places VCR on a text line above PLAY on the button.

Shorthand Variable Text Commands

The table below lists the shorthand variable text commands you can use with the touch panel. The shorthand command data is one-byte, non-ASCII format except for pages, passwords, text, and bitmap names.

Shorthand Variable Text Commands	
@BMP Adds a bitmap file to a button.	Bitmap files are imported into TPDesign3; the numbers are assigned by the touch panel during the download process. Syntax: "'@BMP',<variable text address>,'<bitmap>'" Variables: variable text address = 1 - 255 bitmap = Bitmap chosen from a file location. Example: SEND_COMMAND TP,"'@BMP',85,'Bitmap1'" Adds the Bitmap1 file to button 85.
@BOR Sets the border style on a button.	Syntax: "'@BOR',<variable text address>,<border style>" Variables: variable text address = 1 - 255 border style = See the Border Styles and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'@BOR',65,11" Sets the border style to double shadow on button 65.

Shorthand Variable Text Commands (Cont.)

@BMF

Sets multiple attributes to a button, slider, or gauge.

This command allows you to program up to 12 attributes on one command line.

Syntax:

```
"'@BMF',<variable text address>,'<attribute data>'"
```

Variables:

variable text address = 1 - 255

attribute data:

'%R,<left>, <top>, <right>, <bottom>' = Sets the rectangle position.

'%B',<border styles> = See the Border Styles and Programming Numbers table on page 23.

'%F',<font styles> = See the Font Styles and Programming Numbers table on page 23.

'%T',<button text > = ASCII characters (empty is clear)

'%P',<bitmap> = Bitmap filename (empty is clear)

'%I',<icon> = 1 - 255 (icon numbers are assigned in TPDesign3 project file)

'%J',<text alignment> = 1 - 9 as shown the following alignment chart:

1	2	3
4	5	6
7	8	9

For %C1-%C6, Colors and Programming Numbers table on page 23.

'%C1',<on-state fill color>

'%C2',<off-state fill color>

'%C3',<on-state border color>

'%C4',<off-state border color>

'%C5',<on-state text color>

'%C6',<off-state text color>

Example:

```
SEND_COMMAND TP,"'@BMF',255,'%T POWER |ON'
'%B','4','%C1','72'"
```

Sets the text on button 255 to POWER ON (appears on two lines), adds a triple-line border, and sets the On-state color to White.

@ENA

Enables/disables buttons based on the variable text channel.

Syntax:

```
"'@ENA',<variable text address>,<disable button on/off>"
```

Variables:

variable text address = 1 – 255

disable button on/off=

1 : button disabled

0 : button enabled

Example:

```
SEND_COMMAND TP,"'@ENA',128,1"
```

Disables the button with variable text channel 128. This button will stop responding to pushes completely, until it is sent an Enable command. Nothing short of a touch panel SoftROM firmware reload will re-enable the button. Reloading the touch panel file, reloading the Axcess program, or resetting power on the panel or master will not re-enable the button. It must be sent an Enable command once it has been disabled.

Shorthand Variable Text Commands (Cont.)	
@FON Sets the text font on a button.	Syntax: "'@FON',<variable text address>,<font style>" Variables: variable text address = 1 - 255 font style = See the Font Styles and Programming Numbers table on page 23. Example: SEND_COMMAND TP,"'@FON',56,32" Sets the text on button 56 to variable font style 32.
@ICO Assigns an icon to a button.	Syntax: "'@ICO',<variable text address>,<icon file number>" Variables: variable text address = 1 - 255 icon file number = 1 - 255 Example: SEND_COMMAND TP,"'@ICO',16,12" Adds icon 12 on button 16. Setting the icon value to 0 clears the appearance of the icon.
@JUS Sets the text alignment on a button.	Syntax: "'@JUS',<variable text address>,<text alignment>" Variables: variable text address = 1 - 255 text alignment = 1 - 9 as shown in the following alignment chart: 1 2 3 4 5 6 7 8 9 Example: SEND_COMMAND TP,"'@JUS',9,5" Centers the text on button 9.
@SHO Sets a specific button to on or off.	Syntax: "'@SHO',<variable text address>,<button on/off>" Variables: variable text address = 1 - 255 button on/off= 0 : button Off 1 : button On Example: SEND_COMMAND TP,"'@SHO',128,0" Sets button 128 off.

Shorthand Variable Text Commands (Cont.)	

@TXT
Adds text to a button.
	Use the | character to display text on multiple lines.
	Syntax:
	`"'@TXT',<variable text address>,'<text>'"`
	Variables:
	variable text address = 1 - 255
	text = Enter button text to appear on the button.
	Example:
	`SEND_COMMAND TP,"'@TXT',2,'VCR|PLAY'"`
	Sets the VCR and PLAY text on variable button 2. The | character places VCR on a text line above PLAY on the button.

@UNI
Adds Unicode text to a button.
	Characters for Middle Eastern languages, such as Arabic, are not supported within the Unicode fonts because they are bi-directional. Buttons with Unicode fonts can only be created and edited using TPDesign3 Touch Panel Design Program.
	Syntax:
	`"'@UNI',<variable text address>,'<text>'"`
	Variables:
	variable text address = 1 - 255
	text = Enter button text to appear on button.
	Example:
	`SEND_COMMAND TP,"'@UNI',2,'Foreign Text'"`
	Sets the Foreign Text on variable button 2.

Button String Commands

The table below lists string commands you can assign to buttons by using the touch panel editor. Select the PROPERTIES option in the Edit bar, press the target button, and **enter the string command with the Touch Panel keyboard**. The control system receives the string command when you press a button.

Button String Commands	

$ID
Sets the group ID number on VPN panels.
	Syntax:
	`"$ID,<group ID>"`
	Variables:
	group ID = 0 - 15
	Example:
	`$ID 15`
	Sets the Group ID to 15.

Button String Commands (Cont.)	

$SC
Sends a serial port send_command within a panel, as if sent from Axcess.
	Syntax:
	`"$SC <device offset>,"'<send_command>,<variable text #>,<data>'""`
	Variables:
	device offset = Device number
	variable text # = The variable text number value on the touch panel.
	data = 0 - 59 characters
	Example:
	`$SC 1,"'@TXT',2,'TEXT'"`
	The string is sends the command to put text on a button with a variable text value of 2. It is crucial that all the correct ' and " be used with no spaces after the commas.
	Example:
	`$SC 1,"'SLEEP'"`
	Sets a touch panel to sleep.

$SL
Activates sleep mode on a wireless touch panel.
	This command does not set the panel to sleep, but actually puts a wavepack to sleep.
	Syntax:
	`"$SL"`
	Example:
	`$SL`
	Activates sleep mode on a wireless touch panel (ViewPoint or other panel using a SmartPack/WavePack).

$SP
Sends data out through the serial port of the source panel to a destination panel.
	Syntax:
	`"$SP"<data>""`
	Variables:
	data = Serial string command
	Examples:
	`$SP "CALIBRATE"`
	Sends the Calibrate command to another panel through the Serial Port.
	`$SP "$SC 1,"'@TXT',1,'TEST'""`
	Uses the $SP command to send a Send Command ($SC ***) to another panel through the Serial Port. This is an on-panel button string that is entered using on-screen keyboard.

$ST
Sets the idle time to activate sleep mode for a touch panel in 1-minute increments.
	When the touch panel's input time matches the sleep time, the panel goes to sleep.
	Syntax:
	`"$ST<sleep timeout>"`
	Variable:
	sleep timeout = 1 (Off) - 120 (in minutes)
	Example:
	`$ST 5`
	Sets the touch panel's sleep time to 5 minutes.

Button String Commands (Cont.)	
WORKING? Verifies the communication between touch panels through the use of the on-panel editor.	Responding touch panels tell the sending touch panel to change its Main page to the color white. Syntax: `"WORKING?"` Example: • VPN panel serial port is connected to TPI program port. • VPN panel wants to verify communication between the TPI and itself. • VPN panel issues "WORKING?" to its serial port. It will be sent as $SP "WORKING?". • TPI receives the command and responds to the VPN panel by telling it to set the Main page background to white. Thus communication is verified.

Button IR Macro Commands

Only one macro can run at a time. The panel "locks" for the duration of the macro. A message appears in the center of the touch panel signifying that a macro is executing and does not disappear until the completion of the macro. In addition, the touch panel must be pointed at the IR receivers during the entire macro execution cycle. Otherwise, some transmitted IR signals from the touch panel may not reach the receiver.

Other string types may occur before and after the macro blocks as long as the strings are separated from the macro block with a <CR> and the macro command exists at the beginning of the line. The two commands are identified and defined in the following table.

Macro Commands	

$P
Executes an IR macro pulse.
	The IR macro pulse is located at device#, channel#, for an "on" time in tenths of a second, and a wait time in tenths of a second before executing the next command.
	Syntax:
	`"$P <dn> <cn> <tpo> <tpd> <CR>"`
	Variables:
	dn = device number 2, 3, or 4. This number represents an AXlink device that is associated with 255 channels.
	cn = channel number 1 - 255. This number represents one of 255 particular control functions associated with a device. It must lie within the range of 1 and 255. For example, a button programmed on a touch panel with device 3, channel 15. When that button is pressed, the touch panel transmits the IR code programmed at device 3, channel 15.
	tpo = time pulse on in tenths of a second (max. 65535 or approx. 109 minutes), For example, to add a delay between pulses for 10 seconds, the required parameter is 100.
	<CR> = end of statement (Enter key pressed).
	Example:
	`$P 3 15 10 100 <CR>`
	Transmits the IR code at device 3, channel 15 for 1 second. Then, the macro pauses 10 seconds before executing the next command or before finishing the macro if no other commands exist.

Macro Commands (Cont.)	
$W Used as a delay between pulses.	You must select the CHAR NUMS button on the Keyboard in order to enter the text. There is a space between the different sets of numbers and between the last number and the <CR>. Syntax: "$W <tdbp> <CR>" Variables: tdbp = time delay before pulse in tenths of a second (max. 65535). <CR> = end of statement (ENTER key pressed). Example: $W 455 <CR> This command causes the panel to wait 45.5 seconds before executing the next macro command.

Creating an IR macro button allows you to control multiple devices with a single touch panel button. You are only limited by touch panel IR memory (16 KB). The following steps provide an example of creating an IR macro button controlling a television, VCR, and a satellite tuner.

The IR macro button performs the following processes when pushed:

- Turns On a Television and sets the audio volume.
- Turns On a VCR and selects TV.
- Turns On a satellite receiver.

1. Create a button and label it.
2. Select EDIT, BUTTON, PROPERTIES.
3. In the PROPERTIES dialog, select BUTTON TYPE, and then select GENERAL.
4. In the BUTTON OPTIONS field, select NONE.
5. In the CHANNEL dialog, set DEV to 1 and CHAN to 0.
6. In the STRING field enter the following using the keyboard:

   ```
   $P 2 9 5 1 <CR>
   $P 2 24 5 1 <CR>
   $P 3 27 5 1 <CR>
   $P 4 9 5 1 <CR>
   ```

   Using this as a reference, the following explains what happens when a section of the string is executed:

   $P 2 9 5 1 An IR push is sent to device 2 (TV) on channel 9 (Power on) for a period of 5 tenths of a second and a one tenth of a second pause. The <CR> indicates an end to the command string.
7. Press EXIT CHANGE, EXIT SAVE CHANGE, and then EXIT.
8. To cancel macro execution, touch the screen. All touch panel activity stops until another button press occurs.

Using The IR Manager

The IR Manager is a tool in NetLinx Studio that allows you to capture, create, edit and manage IR Library files for use with IR-controlled devices in your Project/ System. The IR Manager works with the AMX IRIS Infrared/Serial Data Capture Unit to capture IR files from hand-held remote controls. For detailed information on the IRIS, refer to the *IRIS Infrared/Serial Data Capture Unit* instruction manual.

NOTE

If you already have the IR Library files that you need for a project, simply use the New/IR File option in the File menu to add the IR file to the active Project.

IR Manager Context Menu

Right-click inside the Channel/Function list in the IR Manager window to open the IR Manager context menu, described below:

IR Manager Window Context Menu Options

Menu option	Description
Cut/Copy	Cuts or copies the selected Channel/Function to the clipboard.
Paste	Pastes a Channel/Function from clipboard memory to the selected Channel/ Function row in the IR Manager window. All entries below this entry are moved down one row.
Delete	Deletes the selected Channel/Function.
Insert Channel	Inserts a blank channel at the currently selected channel row in the IR Manager window. All channels below the inserted channel are moved down one row.

Creating a New IR File

1. In the File/New sub-menu, click IR File to open the New IR File dialog box.
2. Enter a path to the target directory for the new file in the File Path field (or use the Browse button to navigate to the directory). This is where the new IR file will be saved.

   If you have a Project open, click the Add To Project radio button to automatically add the new IR file to the active Project.
3. Click the Use Generated File Name radio button to assign a System-Generated File Name to the new IR file. When this option is selected, the Manufacturer field is enabled, and the File Name field is disabled, since the generated file name will automatically contain the Manufacturer name (refer to the System Generated File Names and IR Files sub-section below for details). If the Use Generated File Name option is not enabled, the Manufacturer field is disabled and the File Name field is enabled. Enter a name for the new file and click OK.

NOTE

If you want to maintain compatibility with the DOS-based IRLib program, you must use generated file names.

4. A new (empty) IR Manager window opens (the name of the IR file will appear in the title bar):

a. **Lock/Unlock the file**: Check the Locked checkbox in the upper-right corner of the IR Manager window to lock the file. A locked file cannot be edited. All new IR files are locked by default. If the file is not locked, the Overwrite and Insert options are enabled.

b. **Assign a Template**: Open the Template drop-down list to display a collection of templates for many common manufacturers and IR-controlled devices. These generic templates provide a starting point for loading the IR file with functions. Choose a template from the list that closely matches the Manufacturer and/or Device you are programming for, if possible. You should use a template whenever possible to ensure a good load order for your functions.

The options in the Templates drop-down list represent the VPXpress template database.

Once you have a template loaded, the Channel and Template Name columns are populated with generic information, as described below:

- Function Name — This column is still empty at this point.
- Template Name — This column displays the name for the IR function, as it is listed in the selected template file.
- Channel column — This column lists each channel, numbered from 1 to 255 (representing each of the 255 possible channels per each IR-controlled device).

  To the left of the channel number is a representation of a red LED. If the LED is on (bright red), it is indicating that the channel/function is required for use with VPXpress. If the LED is off (dark red), the channel/function is not required by VPXpress. Use these LEDs to ensure that the file will be compatible with VPXpress.

  VPXpress requires that certain functions be on certain channels, in order to properly populate touch panel buttons on a ViewPoint Touch Panel.

5. Edit the Channel/Function assignments as necessary. A file can only be edited if it is not Locked. Use the IR Manager context menu (right-click on any Channel/Function to open) to cut, copy, paste and delete Channel/Function entries. You can cut, copy and paste Channel/Function entries across IR Files. When you are pasting Channel/Function entries into an IR file, use the Overwrite and Insert radio buttons to control how the items are to be pasted into your file:

   - Overwrite — With a Channel/Function entry selected in the list, this option replaces the selection.
   - Insert — This option pastes the copied entry into the selected row, and pushes all of the Channel/Function rows below the entry down (by the number of rows pasted).

System generated file names and IR files

System Generated File Names are slightly different for IR files than for other System files. If you are familiar with the IRLIB program, you'll recognize that NetLinx Studio treats them the same way: Generated file names for IR files are a maximum of eight characters in length, and are based on a portion of the Manufacturer's name. For example, an IR file for a Sony device might look like "SONY0001.IRL". The four-digit number increments by one for each additional IR file that is

produced for that manufacturer. For example, the next IR file for a Sony file would be "SONY0002.IRL". The next would be "SONY0003.IRL", and so on.

If the manufacturer name takes up eight or more characters, it is automatically truncated to make room for at least one digit. For example, an IR file for a Pioneer device might look like "PIONEER1.IRL".

Entering Capture IR Mode

The NetLinx Studio IR Manager allows you to capture and verify IR codes from hand controls via the IRIS Infrared/Serial Data Capture Unit. The IRIS unit connects to the PC running NetLinx Studio via serial port. Refer to the *IRIS Infrared/Serial Data Capture Unit* instruction manual for detailed installation and operating instructions.

Important! *The IRIS unit must be set to communicate at 9600 baud.* This means that before you can capture IR codes, the IRIS must be connected to a PC running NetLinx Studio, and the PC's Master Communications Port must be configured with the settings listed in the table below. Set the PC's communication rate via the Com Properties dialog box (select Master Comm Settings in the Tools menu, and click Configure in the Communications dialog box to open).

Communication Settings for PC/IRS Communication

Parameter	Suggested Setting
Baud Rate	9600
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

To capture IR code:

1. In the IR Manager window, select the Channel/Function you are going to capture.
2. Click Capture in the IR menu, or click the Capture toolbar button to open the Capture IR dialog box. This dialog box displays the selected Channel number (read-only), and the Function Name assigned to the Channels (if one is assigned). The Function Name can be edited in this dialog box, if necessary.
3. Click Capture to capture an IR code.

Capturing Hand Control IR Functions

The IRIS unit uses several different modes to capture and identify different types of hand controls. The modes are called *Capture Mode, Special Mode* and *Modes P5 - P7*. You should first try to capture your IR functions in Capture Mode. If it doesn't work, try Special mode. If you are still having trouble, try modes P5-P7.

Capturing IR functions – Standard Capture mode

Use Standard Capture mode to capture most hand-control IR functions:

1. Make a list of the names and sequence of the hand control functions that you want to capture.

NOTE

To view specific load orders per manufacturer, open the appropriate template in the Template drop-down list (by device type/manufacturer).

2. Use a RS–232 cable to connect the DB–9 connector on the IRIS unit to the RS–232 port on your PC.
3. Set the baud rate on your PC to 9600, to match the baud rate on the IRIS.
4. Connect the power supply to the 13.5 VDC connector on the IRIS unit. The READY LED lights, and 01 appears in the display.
5. On the IRIS unit, press the UP, DOWN and SEND button simultaneously to enter P1 mode (P1 appears on the LED display).
6. Press the UP button two times to toggle on P3 mode. P3 mode allows the IRIS to automatically send the captured function data to the PC running NetLinx Studio.
7. Hold the hand control approximately three inches from the IR capture window. Press and hold down the first key on the hand control to capture the first function. The SIGNAL LED will start blinking. Release the HC key as soon as the READY LED goes dark.
8. The brackets [ ] appear briefly in the display to indicate that the function has been captured. Then, 01 appears and the READY and VERIFY LEDs light.

NOTE

The VERIFY LED will not light if P4 mode is active. IRIS Display Characters and P3 - P7 Modes Settings table on page 43.

9. Hold the hand control approximately three inches from the IR capture window. Press and hold the same key on the hand control again to verify that the IR function was captured correctly. If the function was captured correctly, a pair of [ ] (brackets) will briefly flash in the display. The VERIFY LED goes dark, 01 appears in the display, and the SEND pushbutton's LED lights. If an Er message appears in the display, repeat steps 3 and 5. Otherwise, go to step 6.
10. Repeat steps 7 through 9 to capture all the HC functions on your list.

Capturing IR functions – Special (SP) mode

If you cannot capture an HC function in the standard Capture mode, set the IRIS unit to Special (SP) mode. Perform these steps to capture HC functions in SP mode:

NOTE

If you have problems entering SP mode, you may need to power-cycle the IRIS unit and try again.

1. Press and release the UP and SEND pushbuttons on the IRIS at the same time. The message SP briefly appears in the display, and the UP LED lights indicating that the IRIS is now in SP mode.

2. Perform steps 7 through 9 under Capturing IR Functions – Standard Capture Mode three times, or until the SEND LED lights to capture the HC function.
3. Press and release the UP and SEND pushbuttons at the same time to reset the IRIS unit to default mode. The message nO (normal operation) briefly appears in the display to indicate that the IRIS has returned to Standard Capture (or Verify) mode.

Capturing difficult functions using P5-P7 modes

If you cannot capture an HC function in the Standard Capture or Special modes, set the IRIS unit to the P5–P7 modes:

1. Press and release the UP, DOWN, and SEND pushbuttons at the same time. The message P1 appears in the display. The IRIS unit is now in P mode.
2. Use the UP or DOWN pushbutton to select the appropriate P modes according to the descriptions in IRIS Display Characters and P3 - P7 Modes Settings table. Each P mode setting toggles on and off. The display will show an On or Off message indicating the current P mode setting. You can activate multiple P modes to capture an HC function.
3. Press and release the UP, DOWN, and SEND pushbuttons at the same time to toggle the selected P mode to ON. The P modes are now set in the IRIS unit
4. Perform steps 7 through 9 under*Capturing IR functions – Standard Capture mode*three times.

IRIS display characters and P1–P7 mode settings

The following table lists the display characters and P1–P7 mode settings for special hand controllers.

IRIS Display Characters and P3 - P7 Modes Settings	
`[]`	HC function is captured, analyzed, stored, and verified.
`Er`	Error: HC function did not verify correctly.
`Nd`	No Device. Communication device error detected, or the IRLIB program is not staged to receive HC functions.
`nO`	Normal Operation. Ready to capture HC.
`OF`	P mode is off.
`On`	P mode is on.
`So`	Send OK. HC function sent without errors to a PC running IRLIB.
`SP`	Special Function. Special mode to capture unusual HC functions.
`P1-P2`	Not used.
`P3`	Send HC functions to a PC running IRLIB automatically after the VERIFY operation.
`P4`	Disable the VERIFY operation to capture HC functions. Standard Capture mode requires the VERIFY operation. Set this mode to ON when capturing, set it to OFF when verifying or identifying IR functions.
`P5`	Loose-timing mode to capture JVC (PQ10956) HC functions.
`P6`	Glitch-detection mode to capture Kinderman and some Mitsubishi HC functions.
`P7`	Disable glitch-detection mode to capture non-carrier HC functions.

Verifying IR Codes From a Hand Control

The Verify Function option, in the IR Menu, allows you to verify IR Channel/Functions in your IR file. To verify IR code:

1. In the IR Manager window, select the Channel/Function you are going to verify.
2. Click Verify Function in the IR menu or click the Verify toolbar button to open the Capture IR dialog box.
3. To verify the selected function turn P3 ON, and P4 OFF.
   - If the function was captured in Special mode, turn SP and P3 ON, and turn P4 OFF.
   - If the function was captured in modes P5-P7, turn the specific mode (P5-P7) ON, P3 ON and P4 OFF.

Actuating an IR Function

Use the Actuate Function option in the IR menu (or the Actuate toolbar button) to pulse a selected channel/function. To use this feature, the IR file must be successfully downloaded to the Master.

To actuate an IR function:

1. Select the Channel/Function in an IR Manager window that you want to pulse.
2. Select Actuate in the IR menu, or click the Actuate toolbar button to open the Actuate dialog box.
3. By default, the Device, Port and System numbers are all set to zero. You can change these values if necessary. The Function and ID fields are read-only displays of the selected IR Function.
4. If the information in the Actuate dialog box is correct, click Actuate to pulse the selected Channel/Function to the specified Master.
5. Click OK to close the Actuate dialog box.

Searching for IR Library (IRL/IRV) Files

Use the Find IRL/IRV toolbar button to find an IR file in a specific directory, based on certain (optional) search criteria, like Manufacturer name, Model number, etc. The Find IRL/IRV function uses an *IR Lib Cross Reference Report* to perform a search across multiple IR Files.

To search for an IR File:

1. In the Tools menu, click IR Lib Cross-Reference Report Utility to open the IR Cross-Reference Utility dialog box.
2. In the Directory to process field, enter a path for, or use the Browse button to navigate to a directory containing one or more IRLib files (.IRL/.IRV).

NOTE

Use the Directory to process and Report name down-arrows to open a list of recently used directories/files.

3. In the Report name field, enter a path and filename for, or use the Browse button to navigate to the target directory for the cross-reference report file.

4. Click Run to generate the report.
5. Click the Find IRL/IRV toolbar button to open the Find IR Files dialog box.
6. Enter the search criteria in the text boxes:
   a. Enter the Manufacturer name, Hand Control Model number, and Device Model number in the text boxes.
   b. To search all files in the cross-reference report (without criteria), enter asterisks (*) in these fields. You can also use asterisks to set partial search criteria for any item.
7. In the Cross-Reference File field, enter a path and filename for (or use the Browse button to navigate to) the desired cross-reference report file.
8. Click Find to search for the selected IR function in the files included in the cross-reference report file.

The results of the Find IRL/IRV search operation are listed in the Find IRL tab of the Output window. The information in this tab includes the Manufacturer name, Hand Control Model number, Device Model number, and the name (and path) of the associated IR File.

- Double-click any item in the Find IRL tab to open the selected IR file.
- Right-click to open the Find IRL context menu (same as the Build, Find and Diagnostics tabs, with one exception: use the Add To Project to add the selected IR file to the active Project).

Searching for a Specific IR Function Across Multiple Files

Use the Verify Existing File menu option or toolbar button to find a specific IR function in one or more IR files. To use this feature, you must first complete a Find IRL/IRV search operation, so that the Find IRL tab of the Output window is populated with one or more files.

To search across files for an IR function:

1. In an IR Manager window, select the IR function you want search for.
2. In the Verify column of the IRL tab, click the checkboxes for the files that you want to include in the search.
3. In the IR menu, click Verify Existing File or use the Verify Existing toolbar button to open the Verify Existing Files dialog box.

   The files selected (checked) in the IRL tab are listed in the Files to verify box.
4. Click Yes to begin the search across the selected files. The word Yes appears next to the files (in the Found column) that contain the specified IR function.

Advanced IR Manager Features

Click Advanced in the IR menu to open the Advanced IR sub-menu, described below:

Advanced IR Sub-menu Options	
Available Memory	Opens the Available Memory dialog box where you can view the amount of available memory on any System device.
View Waveform	Opens a Waveform view box in the active IR Manager window, which displays a graphic representation of the IR waveform associated with the selected function.
Zoom In/Zoom Out	Zooms in and out on the Waveform view.
Next/Previous Pattern	Finds the next or previous pattern, in IR waveforms containing multiple patterns. These options are disabled for IR waveforms with only one pattern.

Viewing an IR Waveform

Click View Waveform in the Advanced IR sub-menu to open a Waveform view box inside the IR Manager window(s). The Waveform view box displays a graphical representation of the waveform associated with the selected IR function.

Note that when the View Waveform option is selected, several other details about the waveform are displayed beneath the Waveform view box, including First Pulse Time (in microseconds), Length (in bytes), Repeat Count, Total Repeat Time (in milliseconds), the Carrier frequency, and a list of Unique Times in the waveform (in microseconds).

- To view other waveforms in the file, select another Channel/Function to update the Waveform view.

- Use the Zoom In/Out toolbar buttons to adjust the view on the Waveform view.

- Use the Next/Previous Pattern toolbar buttons to go to the previous or next pulse pattern in the Waveform view. These options are only available if the selected function contains more than one pulse pattern (i.e. functions captured via Special mode).

Viewing the Available Memory on an IR System Device

1. Click Available Memory in the Advanced IR sub-menu to open the Available Memory dialog box.
2. Enter the target IR device's Address information (Device, Port and Address for NetLinx devices).
3. Click Get Available Memory. The available memory for the selected device is displayed at the bottom of the dialog box.

Upgrading the Firmware

Your PC must be connected to the PROGRAM DB-9 to stereo plug connector on the Controller using the programming cable in order to upgrade the firmware in the ViewPoint. Refer to the*Using Connector Ports* section on page 3 for more information on the use of the programming cable.

If power is lost during the download process, the unit powers up with the same set of code it had prior to the download. There is a small window during which a loss of power can be catastrophic. If power is lost between the erase of flash memory and the completion of copying the new boot code from RAM to flash memory, the unit does not operate at all when power returns.

If you have not already installed the SOFTROM program, do so by following the steps contained on the AMX Control Disc.

Configuration

To configure the communication setting for the SOFTROM program:

1. Press F1, the Configuration screen appears.
2. Using the up/down arrow keys, select the communications port you are using to interface with the controller and press ENTER.
3. Using the right arrow key, move to the BAUD RATE column. Then, use the up/down arrow keys to select the interface communications speed and press ENTER. Be sure the BAUD RATE selections match the setting on the Controller.
4. Press F10 to save the communication settings and to exit the CONFIGURE screen.

Downloading the Firmware

To download the firmware:

1. Press F5 to acquire the list of online programmable devices. You can also press F2 to select all online programmable devices and F3 to clear all devices.
2. Using the up/down arrow keys, select your firmware versions listed in the Firmware column of the screen, and press ENTER.
3. Using the Tab key, switch to the ONLINE MASTERS list.
4. Using the up/down arrow keys, select the device to be programmed.
5. Press ENTER for each device as it is selected
6. Press F4 to program the selected device; a loading message appears.
7. Press F5 to refresh the screen. Verify that the selected device has the correct firmware version. If any devices still appear with an old firmware version, repeat steps 3 - 5 until it appears with the correct version.

Firmware can be downloaded to multiple device numbers automatically. If multiple devices are selected, the bottom half of the loading bar indicates the percentage complete for the selected devices.

8. Press F10 to exit the SOFTROM program.

VPA-DS ViewPort Docking Station

The ViewPort Docking Station (FIG. 8) includes a built-in battery charger and an angled desktop docking station to cradle your ViewPoint touch panel.

FIG. 8 ViewPort Docking Station

ViewPort Docking Station Specifications

The following table lists the specifications for the VPA-DS ViewPort Docking Station.

Specifications	
Dimensions (HWD)	4.83" x 8.26" x 7.62" (122.7 mm x 209.8 mm x 193.4 mm)
Environmental operating range:	
Temperature	50 °F to 104 °F (10 °C to 40 °C)
Humidity	0% to 90% non-condensing
Power requirement	13.5 VDC at 2.8 A
Indicators (FIG. 9):	
Yellow LED	• Indicates ViewPoint connected to ViewPort Docking Station
Green LED	• Indicates spare battery is fully charged
Red LED	• Indicates spare battery is charging
Options:	
Power supply	13.5 VDC @ 2.8 A power supply
Battery	VPA-BP ViewPoint Rechargeable Battery (NiMH, 3.7 Amp @ 7.2 VDC)

ViewPort Product Information

The ViewPort Docking Station (FIG. 9) provides a built-in battery charger and an angled desk docking station to cradle your ViewPoint touch panel. When a ViewPoint is placed in the docking station's cradle, the ViewPoint makes contact with the charging pins and power is supplied by the docking station.

FIG. 9 ViewPort Docking Station (shown with two types of battery charging methods)

Battery charging

Power to charge the battery is supplied to the VPA-DS when the power supply is plugged into the rear power connector on the docking station (FIG. 10). A ViewPoint battery can be charged in three different ways:

- An external power supply can be plugged into the side of the ViewPoint which will supply external power to run the panel and the onboard battery charger.
- The ViewPoint can be placed onto a VPA-DS ViewPort Docking Station that will supply external power to run the panel and the onboard battery charger.
- The ViewPoint battery can be removed from the ViewPoint and placed into the battery compartment of the ViewPort Docking Station (VPA-DS).

Charging of the battery within the compartment and the battery within the ViewPoint are no longer mutually exclusive.

NOTE

Insert or remove a battery slowly to avoid false indications on the LEDs.

A charge session for a ViewPoint (with VPA-BP battery) on the ViewPort lasts for 5 hours of continuous use. The ViewPort has a self-contained smart-chip that reads the power level of the battery and then "smart-charges" it based on the amount of power and duration needed for the best possible charge per session.

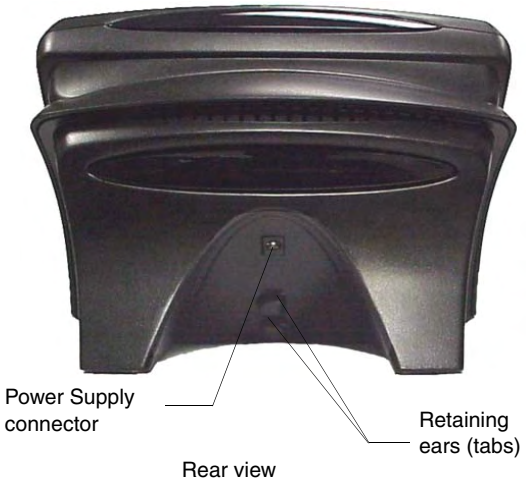


FIG. 10 Rear view of the docking station

NOTE

The new ViewPort design allows simultaneous charging of both the installed battery and a mounted ViewPoint panel (assuming the use of a PSN2.8 power supply).

***The RED LED does not turn Off when** the ViewPoint is attached because the ViewPort is still charging the installed battery **AND** is still supplying voltage to the ViewPoint contacts.*

NOTE

*It is recommended that you **do not attempt to replace the internal Lithium battery**. THis battery has a lifespan of up to 5 years.*
If there is a problem with this piece, please contact your AMX sales representative to make arrangements to ship your panel back to the factory for battery replacement.

Troubleshooting

This section describes the solutions to possible hardware/firmware issues that could arise during the common operation of a ViewPoint touch panel.

Troubleshooting Information	
Symptom	**Solution**
The RED LED on the docking station is flashing for extended periods of time.	• The RED LED on the ViewPort will blink at the beginning of the charge, when its going through Pre-Charge qualifications on the battery. This means that the base is making sure that the battery voltage is not too low, not too high, and the battery temperature is below a preset limit. • Usually, this test only lasts for a couple of seconds. If, however, the temperature is too high; it will wait until the temperature is within specs to begin charging. If the voltage on the battery is too low, it will pulse trickle charge the battery until it is within specs, and then begin a fast-charge. • If the Red LED continues to flash for more than a few minutes, carefully/cautiously feel the battery to see if it is hot to the touch. If it is, let it cool down, then retry the charging. • If the battery is not hot, let it go through the trickle charge for 30 minutes or so. If the trickle charge does not bring the battery back into charging specs, there is a good chance that the battery has a bad cell. Replace the battery.

AMX reserves the right to alter specifications without notice at any time.

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Last Revision: 10/10/04